

What is claimed is:

1. An antenna for a towed, low-profile submarine buoy comprising:

a tube;

fins along a length of said tube;

a first circular plate with an aperture, said first circular plate secured to a first end of said tube and said fins;

a second circular plate secured to a second end of said tube and said fins wherein said first and second circular plates, an exterior of said tube and said fins define a plurality of resonant cavities;

a first transmission line extending through an interior of said tube with said first transmission line including a feedpoint terminus removably conductive to a radio-frequency energy source, said feedpoint terminus filling out said aperture of said first circular plate;

a hub with a cylindrical exterior and two ends with one end of said hub conductive to an opposite terminus of said first transmission line;

a plurality of curved plates spaced apart from an extending plane of said fins and projecting from said second circular plate, each of said curved plates subtending to partially encompass a facing resonant cavity from said plurality of resonant cavities; and

a plurality of electrical switches individually attaching said curved plates to said tube with each individual switch including a contact movable in a cavity of said individual switch;

wherein a righting action of said curved plates inclines said cavity thereby allowing said contact to move to an actuated position such that radio-frequency energy from the radio-frequency energy source can be conducted from said hub to said individual switch; and

wherein the radio-frequency energy conducted by said individual switch distributes from said individual switch as current across said individually attached

curved plate and said facing resonant cavity such that a radiation pattern is formed by the difference in phase of said facing resonant cavity and said individually attached curved plate.

2. The antenna in accordance with claim 1, wherein each of said plurality of switches further comprises a pin conductive to said contact and said hub and said hub further comprises radial recesses sized to accommodate said pin from each of said plurality of electrical switches.

3. The antenna in accordance with claim 2, wherein said second circular plate further comprises an aperture and said antenna further comprises a second transmission line extending through the interior of said tube from said hub to a terminus of said second transmission line filling out said aperture of said second circular plate, the diameter of said second transmission line being equivalent to the diameter of said first transmission line whereby said second transmission line matches the impedance of said first transmission line conducted at said hub.

4. The antenna in accordance with claim 2, wherein the diameter of said first transmission line decreases from said feedpoint terminus to said hub thereby allowing an impedance

transformation of the radio-frequency energy conducted over the length of said first transmission line.

5. The antenna in accordance with claim 4, wherein said second circular plate further comprises an aperture and said antenna further comprises a second transmission line extending through the interior of said tube from said hub to a terminus of said second transmission line filling out said aperture of said second circular plate, the diameter of said second transmission line being equivalent to the smallest diameter of said first transmission line whereby said second transmission line matches the impedance of said first transmission line conducted at said hub.

6. The antenna in accordance with claim 5, wherein said each of said plurality of curved plates are spaced apart from each other at a third of the circumference of said feed tube.

7. The antenna in accordance with claim 6, wherein said each of said plurality of curved plates subtends to said facing resonant cavity at an angle in the range of  $45^{\circ}$  to  $90^{\circ}$ .

8. The antenna in accordance with claim 7, wherein said fins extend from said tube at a dimension of a wavelength of the

radio-frequency energy divided by a factor of twenty-two and said first and second circular plates are dimensioned at a diameter of the wavelength divided by a factor of eight whereby the dimensioning of said fins and said first and second circular plates reduces a shadow condition of said fins and said first and second circular plates around said antenna such that the radiation pattern beyond said facing resonant cavity is emitted symmetrically.

9. The antenna in accordance with claim 8, wherein said plurality of curved plates projects from said second circular plate at a dimension of the wavelength divided by a factor of three whereby the dimensioning of said curved plates from said second circular plate defines a circumferential boundary of said antenna and said fins are dimensioned at a length of the wavelength divided by a factor of five and multiplied at a factor of two whereby the dimensioning of said fins defines a longitudinal boundary of said antenna.

10. The antenna in accordance with claim 9, wherein said contact is a sphere.

11. The antenna in accordance with claim 9, wherein said contact is a cylinder.

12. The antenna in accordance with claim 9, wherein the righting action of said curved plates inclines said cavity thereby allowing a magnet to the actuated position thereby influencing said contact to the actuated position such that the radio-frequency energy from the radio-frequency energy source can be conducted from said hub to said individual switch.

13. An antenna for a towed, low-profile submarine buoy comprising:

means for actuating said antenna by the positioning of said antenna; and

means for transmitting a radiation pattern.

14. The antenna in accordance with claim 13, further comprising:

means for transmitting the radiation pattern over a plurality of frequencies.

15. The antenna in accordance with claim 14, further comprising:

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means for enhancing antenna gain.